

DOCUMENT RESUME

ED 463 541

CS 510 886

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TITLE Generative Learning Effect of the Story Impressions Preview
Method on the Comprehension of Information from Narrative
Text.
SPONS AGENCY Idaho State Univ., Pocatello.
PUB DATE 2002-04-03
NOTE 33p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Grade 8; Instructional Effectiveness; Junior High Schools;
*Reading Comprehension; Reading Research; *Reading Skills;
*Reading Strategies; *Recall (Psychology)
IDENTIFIERS Narrative Text; *Prereading Activities

ABSTRACT

A study assessed the extent to which a generative prereading activity known as Story Impressions (SI), which entails composing a guess from clues, influenced passage recall relative to a more passive prereading activity of reading a content preview (CP). Using 8th grade students, the results indicated the CP groups equaled the reading only control groups in recall of the major phrases of the narrative as well as other passage information. As expected, however, the SI groups significantly exceeded the CP groups and the control groups on both aspects of passage recall. It is argued the superiority of the Story Impressions method could be due to its having induced the three fundamental processes that constitute reading comprehension according to Gernsbacher's (1990) "Structure Building Model" and the concomitant "generative learning effect" (Wittrock, 1989) so produced. Appendixes include story impressions and content preview for the text passage "Luther Burbank." (Contains 47 references and 4 tables.) (Author/RS)

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Generative learning effect of the Story Impressions preview method
on the comprehension of information from narrative text

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SUBMISSION DATE: April 3, 2002

AUTHOR NOTES:

Partial funding for Andrew Albanese's contribution to this research was provided by a grant from the Graduate Student Research and Scholarship Committee, Idaho State University, Pocatello, Idaho. Andrew Albanese now resides in Canoga Park, CA 91303. Send correspondence to Peter Denner, College of Education, Box 8059, ISU, Pocatello, ID 83209 or dennpete@isu.edu.

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Abstract

The extent to which a generative prereading activity known as Story Impressions(SI), which entails composing a guess from clues, influences passage recall relative to a more passive prereading activity of reading a content preview (CP) was assessed. Using 8th grade students, the results indicated the CP groups equaled the reading only control groups in recall of the major phrases of the narrative as well as other passage information. As expected, however, the SI groups significantly exceeded the CP groups and the control groups on both aspects of passage recall. It is argued the superiority of the Story Impressions method could be due to its having induced the three fundamental processes that constitute reading comprehension according to Gernsbacher's (1990) *Structure Building Model* and the concomitant *generative learning effect* (Wittrock, 1989) so produced.

Generative learning effect of the Story Impressions preview method
on the comprehension of information from narrative text

A major aim of schooling has always been to increase the reading comprehension of students. Research on prereading activities has yielded a body of work which suggests that inducing reader's to activate and to make connections between their prior knowledge and the text can facilitate reading comprehension (Hansen, 1981; Langer, 1980; Langer & Nicolich, 1981). More recently, educators have begun to focus on prereading activities that go beyond building or activating readers' preexisting knowledge to ones that have the added potential to influence the processes by which readers use their knowledge once activated (McGinley & Denner, 1987; Wood, 1984). Denner and associates (Denner & McGinley, 1992; Denner, McGinley & Brown, 1989; and McGinley & Denner, 1987) have developed a previewing method called Story Impressions, which uses writing to induce cognitive activities that enhance several facets of reading comprehension.

In a comprehensive review of over 160 studies in the literature, Aaron (1997) concludes that effective reading comprehension means a reader is able to "a) become aware of the purpose of reading; b) develop a sensitivity to story grammar elements while reading; c) activate relevant schemata; d) develop story maps that represent the material being read; e) build mental imagery of the text; f) generate questions while reading the text; g) predict ideas that follow current statements; h) summarize what has been read; and i) monitor their own comprehension processes" (p. 482). Similarly, a prior meta-analysis of the literature by Hattie, Briggs and Purdie (1996) indicated effective reading comprehension entails "a high degree of learner activity and metacognitive awareness" (p. 131). As will be detailed below, the Story Impressions (SI) method of previewing promotes a high degree of learner activity and appears to incorporate four of Aaron's (1997) key features of effective comprehension processes namely, activating relevant schemata, developing a sensitivity to passage structure, predicting future material, and comprehension monitoring.

More specifically, the SI method consists of providing readers with the most important phrases in a subsequent reading assignment and then asking them to compose a best guess scenario in the form of a written "story guess" from the key phrases given (Denner & McGinley, 1992, p. 12). After this, they read the actual passage and implicitly compare the proposed story with the actual one. Subsequently, readers are given a series of questions regarding the actual story to assess comprehension and recall of the passage read.

By composing a story guess, readers are induced to construct a mental model (Johnson-Laird, 1983), which is a highly generative learning activity (Wittrock, 1989). In the course of reading the actual story, the readers' mental models are modified to varying degrees thereby activating metacognitive awareness (comprehension monitoring), and also enhancing their motivation to read and comprehend the story to determine the accuracy of the predictions made in their own story guess. Thus, in addition to the development and activation of relevant prior knowledge, the SI method induces readers to anticipate passage structure through the process of composing and to make predictions regarding passage content that are then tested out when they subsequently read the actual story.

In order to examine separately the effects on recall due to readers' making predictions and the generative learning effect due to composing, Denner and McGinley (1992) divided students into two-experimental groups. One group (the SI group) was given the most important phrases and asked to write a story of their own based on the phrases given. The second group was also provided with the most important phrases from the subsequent story, but this group was only asked to list their predictions from the key phrases provided. A third group (control group) simply read the narrative passage. These researchers found the SI group produced the highest level of story recall for both above and below average readers in the sample of junior high school students used in their study.

Thus, it appears that the generative activity of composing may be the key factor in enhancing recall. However, a very important outcome of composing is that the ideas become interconnected

into a story (mental model), which provides to varying degrees a conceptual framework for the subsequent passage (Mayer, 1999). Such a framework can serve as a retrieval plan (Bower, Clark, Lesgold & Winzenz, 1969) for the recall of both the most important information and the lower-level subordinate material. Students in the Denner and McGinley (1992) experiment who only received the major phrases to list their predictions, did not, in all likelihood, develop such an organized framework for their recall. Thus, the superior performance of the SI group in their study may have been due to the organization of material produced by composing rather than (or in addition to) the generative act of composing itself.

To further analyze these processes, in the present experiment we compared the recall performance of those who composed a best guess from the major phrases (the SI group) with those who were provided with an intact narrative preview which interconnected the most important information in the subsequent passage (a Content Preview group). Ever since the classic work of Slamecka and Graf (1978), generative activity has been shown to be a major factor in increasing recall (see Wittrock, 1989 for a review). Thus, we predicted that learners who generated their own organizational framework by composing a story (the SI group) would outperform learners who were simply provided with a framework (the Content Preview group). Furthermore, it is nearly axiomatic in the psychological literature that organization enhances recall (Baddeley, 1998), and so we predicted that the Content Preview group would recall more than a reading only control group.

Reading ability was included as a factor in this study because of its potential to moderate the effectiveness of the two preview methods. It was also included as a control procedure to extract the influence of reading ability from the error term used to assess the main effect of preview method. Denner and McGinley (1992) found a significant ordinal interaction effect for reading ability indicating that below average readers benefited more from the SI method than above average readers, but for recall of impression-related story information only. Hence, it might be that lower ability readers will be helped more by the SI method than higher ability readers compared to the content preview method. However, our main intent in including reading ability as a factor in the

experiment was to show generalizability of our findings across reading ability levels, rather than predicting an interaction effect.

Also under consideration in this study was whether or not the SI method would be effective when applied to narrative passages other than short stories. Many researchers examining the patterns of organization found in text have pointed out that historical text has a narrative-like text pattern (e.g., Brewer, 1980; Meyer, 1975; Pehrsson & Robinson, 1985). Like the episodes of stories, historical passages describe the activities of people and depict changes in events over time. To assess the generalizability of the SI method to history texts, we employed an historical biography as the experimental passage in this investigation.

Method

Participants

A total of 74 eighth-graders participated in this study. The students were all volunteers from a junior high school in the inter-mountain west region. All students and their parents (or guardians) gave written, informed consent prior to being considered for this research. Of the students who participated in the study, 54% were female and 46% were male. The participants were grouped according to reading ability (above versus below median) based upon a median split ($Mdn = 62$, $SIR = 22.4$) of their current standardized reading achievement test scores (Iowa Test of Basic Skills Reading Composite Percentile Scores). Within blocks, the students were randomly assigned to six groups. The six groups did not differ significantly in reading achievement for either block. The average percentile score for the low-ability readers was 32 ($SD = 23$) and the average percentile score for the high-ability readers was 83 ($SD = 11.5$).

Next, two of the six groups were randomly assigned to each of the three conditions (story-impressions preview, content preview, or no preview). The six teachers were then assigned at random by gender to one of the two groups in each of the three conditions. Thus, students were nested under teachers and teachers were nested under the three methods with 2 teachers (1 male and

1 female) per condition. Differences in the writing ability of the students was controlled for through the random assignment of the students to the groups since only the story impressions preview group required any writing.

Materials

The history text passage used in this investigation was "Luther Burbank" (Bailey, 1964). The passage was selected from a collection of biographies written for junior high school students. It described the life of Luther Burbank, who was a scientific innovator in the agriculture industry. The narrative passage was 2250 words in length. The readability of the passage, as computed by the Fry (1977) and Flesch (1951) formulas was determined to be at the eighth-grade reading level. We also had two junior high school English teachers judge the suitability of the passage for eighth-grade students before selecting it for this investigation. The teachers also told us that all students would have very little or no prior knowledge of this topic. As a result, we did not assess the students' prior knowledge; instead, we elected to control for any differences in prior knowledge through the random assignment (within blocks) of the students to the treatment conditions.

For each sentence of the Luther Burbank passage, normative ratings of the "structural importance" (SI) were computed according to procedures outlined by Johnson (1970). First, the passage was divided into pausal units. The pausal units were then rated for their structural importance to the overall meaning of the passage. To accomplish this task, 28 college students were assigned to one of three subgroups having the task of eliminating either 1/4, 1/2, or 3/4 of the pausal units judged least important to the overall semantic content of the passage. A count of the number of times a sentence unit was retained rather than eliminated provided the measure of its structural importance (SI) (Johnson, 1970). Based on this procedure, the 310 pausal units of the biographical text were classified into six levels of structural importance.

Those passage units that were rated at the highest level of structural-importance (level 1 of 6 levels) were used in the construction of the story-impressions. Eighteen pausal units were selected from the 53 level 1 units. The number 18 was chosen because this was the number of story

impressions used in the study conducted by Denner and McGinley (1992), and was consistent with the range recommended by McGinley and Denner (1987) in their original presentation of the story impressions method. Sixteen of the 18 story impressions selected were the highest rated 16 of the 53 level 1 units. Two additional pausal units were selected from among the 53 level 1 units because the researchers agreed they provided critical bridge clues. Each selected pausal unit was then reduced to a telegraphic phrase. These story-impressions were then arranged vertically in the same order as in the history passage. The phrases were then marked with arrows to indicate their order. Appendix A presents the story-impressions for "Luther Burbank" (Bailey, 1964) used in this investigation.

The construction of the content preview followed the guidelines established by Graves, Cooke, & LaBerge (1983). The same 18 level 1 passage units used to develop the story impressions served as the content information for development of the content preview. The text so developed consisted of (1) questions to promote interest and activate prior knowledge of the topic, (2) directions to establish the purpose for reading the story, (3) a description of important passage content, and (4) definitions for key vocabulary words. Appendix B presents the content preview developed for "Luther Burbank" (Bailey, 1964).

Instrumentation

The experimenters developed a 45-item completion test using sentences extracted from the passage with an important phrase omitted from each sentence. Fifteen items measured recall of the passage information directly referenced in both experimental methods, i.e., the 18 most structurally important phrases. The other 30 items assessed recall of non-referenced passage information. The 30 non-referenced information items consisted of 15 items selected from passage-units rated high in structural importance (levels 1 & 2), and 15 items selected from passage units rated medium in structural importance (levels 3 & 4).

Design

The statistical design for this study was a 2 (above median versus below median reader) by 3 (story-impressions, content preview, and reading only) by 2 (teachers) nested factorial design with teachers as the nested factor. Post hoc mean comparisons were made using the Tukey-Kramer Method of multiple comparisons.

Procedures

All teachers had experience teaching at the secondary level. Before data collection, the teachers were blocked by gender and assigned at random to one of the three conditions. Hence, two teachers (1 male and 1 female) were nested under each of the three conditions.

We met for two hours with the teachers assigned to each experimental method. For each method, the teachers were given step-by-step, scripted instructions to follow. Any concerns and questions posed by the teachers were discussed until each teacher was confident she or he could follow the procedures as stated in the script for their assigned method. We also emphasized our expectation that each teacher closely follow the scripted directions and monitor the students for compliance with the directions. We asked the teachers to report any deviations from the scripted directions, if deviations occurred. None were reported. The teachers reported that they followed the scripted instructions as directed and the students followed the directions when completing their assigned tasks.

Prior to the beginning of the study, the students were grouped according to reading ability, and were randomly assigned to one of 6 groups. The groups, in turn were then randomly assigned to the 6 teachers and the 3 conditions (story-impressions, content preview, or reading only). Hence, the study employed 6 experimental groups, with 2 groups nested under each method (2 story-impressions, 2 content preview, and 2 reading only).

For all groups, the teachers first read a scripted statement indicating the purpose of the study. All students were told that they had been assigned to one of six groups. They were also told that some groups would complete the same activity, while other groups would be doing a different

activity. The students were also informed they would be asked to answer some questions about the history passage when they completed reading it. The students were not told, however, the precise nature of the test.

For the two story-impressions groups, the teachers distributed the set of story-impressions for "Luther Burbank." The students were also given a written set of specific directions. The teachers read the directions to the students as the students read along. The scripted directions told the students that the story impressions were phrases extracted from the history passage they were about to read. The students were then instructed to read the phrases to get ideas about the main character and the events described in the history passage. Next, they were directed to link the phrases together, in the manner indicated, and to formulate a written guess about what might happen in the actual history passage. It was further indicated that they should focus on the content of their stories and not worry about grammar, spelling or other writing mechanics.

The students, in each of the two story-impressions groups, then independently reviewed the set of story-impressions and composed their written guesses. The average amount of time the students spent writing their stories was approximately 20 minutes ($M = 19.8$, $SD = 4.7$).

During the same period, students in the two content preview groups were given a written set of specific directions and a copy of the content preview for the history passage, "Luther Burbank." They were first informed about the purpose of a content preview. They were then instructed to read the preview, and to use the questions posed in the preview as guidance for reading the history passage. On the average, the students spent approximately 5 minutes ($M = 4.8$, $SD = .88$) reading the preview.

Participants in the reading only control group were instructed to engage in non-reading activities such as quiet talking. The teachers supervised the students in the control groups until the second phase of the study began.

During the second phase of the study, a copy of "Luther Burbank" was distributed to all the participants. The students were given 15 minutes to read the passage. All students completed

reading the passage before the 15 minutes had elapsed. As the students in each group finished reading, he or she was given the completion test. The students had 30 minutes to complete the test. All students completed the test in less than 30 minutes.

Scoring

The students' responses to each item on the completion test were counted correct if they contained the omitted word or phrase, or its semantic equivalent. Consideration was also given to variations in phrasing and synonyms as long as the meaning of the original sentence was not significantly changed. The objectivity of the scoring judgments was assessed by having an independent judge re-score the tests. The Pearson product-moment correlation for the two scores was $r = .90$, $p < .001$ ($n = 74$), indicating sufficient inter-rater reliability for the purposes of this study.

Results

Preliminary Analyses

Initial analyses using the Brown-Forsythe procedure (Keppel, 1991) indicated that the ANOVA assumption of homogeneity of variance for the six groups was met for all dependent measures. Inspection of graphical representations of the data also indicated that this assumption was not violated for any of the dependent measures.

Total Recall

The effect of the previews (story-impressions or content preview) on eighth-graders' total cued-recall of content from the history passage was assessed using a $2 \times 3 \times 2$ nested factorial design. Reading ability (above versus below median) and method (reading only, content preview, or story-impressions) served as the between subjects factors, and teachers (2 teachers under each condition) served as the nested factor. Because the number of subjects in each cell of the design was not equal, the regression approach for unbalanced designs examining the unique contribution of each source of variation was employed for all ANOVA analyses (Keppel, 1991; Lomax, 1992).

Table 1 presents the means and standard deviations for total performance for each preview method by reading ability and teacher. The ANOVA (Table 2) for total cued-recall performance (TR) displayed a statistically significant main effect for reading ability, $F(1,3) = 39.54, p = .008$, and a statistically significant main effect for preview method, $F(2,3) = 47.92, MSE = 17.34, p = .005$. The preview method by reading ability interaction, $F(2,3) = .26, p = .788$, was not statistically significant. The effect for teachers within preview methods was also not statistically significant (error 1), and there was no reading ability by teachers within preview methods interaction (error 2).

Insert table 1 about here

Insert table 2 about here

Post hoc mean comparisons using the Tukey-Kramer method indicated the mean of the story impressions groups ($M = 32.4$) exceeded ($p < .05$) the mean of the reading only groups ($M = 21.7$) and was also higher than the mean of the content preview groups ($M = 22.6$). The mean of the content preview groups and the reading only groups did not differ statistically from each other. As expected, the above median readers ($M = 29.9$) outperformed the below median readers ($M = 20.5$). This finding suggests that the effectiveness of the story impressions method extends to biographical history passages.

Recall of Referenced Information

The effects of the methods (story-impressions or content preview and reading only) on the cued-recall of referenced passage information contained in the story impressions and the content preview was assessed via ANOVA procedures using the same design as described above. The means and standard deviations for each method by reading ability and teacher for recall of

referenced passage information are also presented in Table 1.

The ANOVA (Table 2) using the regression approach for cued-recall of referenced passage information (RI) displayed a statistically significant main effect for reading ability, $F(1,3) = 22.37$, $p = .018$, and a statistically significant main effect for method, $F(2,3) = 40.78$, $MSE = 3.83$, $p = .007$. The method by reading ability interaction, $F(2,3) = .60$, $p = .604$, was not statistically significant. The effect for teachers within methods was also not statistically significant (error 1). In addition, there was no reading ability by teachers within methods interaction (error 2).

Mean comparisons using the Tukey-Kramer method revealed the mean of the story impressions groups ($M = 12.0$) exceeded ($p < .05$) both the mean of the reading only groups ($M = 7.2$), and the mean of the content preview groups ($M = 8.2$). The latter two conditions did not differ statistically from each other. As anticipated, the mean of the above median readers ($M = 10.5$) exceeded ($p < .05$) the mean of the below median readers ($M = 7.6$). These results suggest one effect of the story-impressions method was to enhance recall of high importance passage information directly cued by the story impressions. Importantly, despite the fact that the content preview referenced the same high-importance information as the story impressions, the content preview used in this investigation was not shown to enhance recall of the previewed passage information.

Recall of Non-Referenced Information

To examine the impact of the previewing methods on the eighth graders' acquisition of passage information not directly referenced in the previews, a separate ANOVA was performed using the nested design described previously. The unique sums of squares ANOVA using the regression approach was performed on the eighth-graders' cued-recall of the non-referenced passage information (NRI). Table 1 presents the means and standard deviations by method, reading ability, and teacher.

The results of the ANOVA (Table 2) revealed a statistically significant main effect for reading ability, $F(1,3) = 47.75, p = .006$, and a statistically significant main effect for method, $F(2,3) = 38.81, MSE = 7.00, p = .007$. The reading ability by method interaction, $F(2,3) = .11, p = .899$, was not statistically significant. In addition, neither the effect for teachers within methods (error 1), nor the interaction effect for reading ability by teachers within methods were statistically significant (error 2).

Mean comparisons using the Tukey-Kramer method indicated the mean of the story impressions groups ($M = 20.3$) was statistically significantly ($p < .05$) higher than the mean of the reading only group ($M = 14.4$), and the mean of the content preview groups ($M = 14.4$). The latter two treatment conditions did not differ statistically from each other. Again, as expected, the mean ($M = 19.4$) of the above median readers was statistically higher than the mean ($M = 12.9$) of the below median readers.

These results indicate story impressions preview method enhanced recall of passage information not directly signaled by the content of the previews. This finding conforms to a previous experiment (Denner & McGinley, 1992) on the use of story-impressions as a prereading activity for short stories for junior high school students. This finding is important because it means the story impressions preview method broadly influenced the readers' comprehension of the text, and that the beneficial effects were not caused simply by readers' increased attention to the passage content cued by the story impressions.

Preview Length and Time

As previously noted, it took students on average about 20 minutes to complete the story impressions preview method but it took students only about 5 minutes on average to read the content preview. This time difference was expected due the fact that writing a preview naturally takes longer than reading a preview. To examine whether time per se was a factor in the effectiveness of the story impressions method, we examined the correlation of the time spent writing

previews for the students in the story impressions groups with the three recall measures--total recall, referenced information, and non-referenced information. In addition, to determine whether the amount composed influenced recall, we examined the length in words of the best-guess previews written by the students in the story impressions groups. Table 3 presents the means and standard deviations for the length in words of their previews and the total time spent composing their previews for the students in the story impressions groups by reading ability level. Table 4 presents the intercorrelations of the total time and length in words of the story impression previews with the three recall measures. The results revealed negligible and statistically nonsignificant ($p > .05$) correlation coefficients between preview writing time and each of the recall measures. In contrast, the findings revealed positive and statistically significant ($p < .05$) correlation coefficients between the number of words in the students' written best-guess previews and their recall of information from the passage. These results indicate that it was the act of composing the best-guess previews from the story impressions and not the time spent previewing that led to the beneficial effects of the story impressions preview method.

Insert table 3 about here

Insert table 4 about here

Discussion

In this experiment, we compared the effect of generating a best-guess preview from the major phrases of a to-be-read passage (Story Impressions group) with reading the major phrases imbedded in an overview presented before the actual passage (Content Preview group). The major

phrases used by both experimental groups consisted of the eighteen phrases in the passage that were determined to be the most important to the semantic structure of the passage as a whole. Subsequent to reading the entire passage, both groups were examined for recall of the major phrases (referenced information) as well as other passage content (non-referenced information). While both experimental groups received the major phrases twice, once before, and then again as they appeared in the actual text during reading, only the Story Impressions group produced significantly more recall (over 30% more) of these phrases and other passage content than a reading only control group. The Content Preview group equaled the control group in recall across all measures, including recall of the major phrases. The results are in concert with the findings of Denner & McGinley (1992), and extend those findings from the previewing of short stories to the previewing of other types of narrative texts namely, historical biography.

The findings indicate that recall of the major phrases was not enhanced by mere repetition of the phrases themselves nor by the organizational structure provided by embedding the phrases in an overview of the subsequently read passage as was the case for the content preview groups. Instead, the generative learning process of composing a best-guess preview was the key factor enhancing recall of both the major phrases themselves (referenced information) and other passage material (non-referenced information) for the students using the story impressions preview method. This interpretation is also supported by the positive correlation coefficients relating the recall measures to the length of the best-guess previews written by the students in the story impressions groups.

The vast bulk of the generative learning literature (see Wittrock, 1989, for a review) has only examined the amount of generated material recalled. In this study, no examination was made of the recall of the composed best-guess previews themselves--that is the preview material generated by the students in the Story Impressions groups. However, we did examine recall of information from the actual narrative passage once it had been read. Our results suggest that a generative learning effect extends to material contained in a narrative passage that was read subsequent to the generative

activity of composing a preview. Thus, we were able to demonstrate a more pervasive effect of a generative learning process on recall than has previously been shown. Of course, the Story Impressions method in which the generative process of composing is embedded does consist of other activities and associated processes that may also have influenced recall performance.

In fact, the processes produced by the Story Impressions method seem quite similar to those that constitute the Structure-Building Model of reading comprehension (Gernsbacher, 1990, 1996). According to Gernsbacher, there are three basic processes in reading comprehension. The first process is "laying a foundation," wherein the reader tries to figure out and develop some overall semantic structure for the material being read. Having formed some tentative semantic structure early on in reading the passage, the learner uses the "mapping" process to place new information into the developing structure that is consistent with it. New passage information encountered that is inconsistent with the developing structure requires the reader to use the "shifting" process to form a new structure or perhaps a substructure within the existing semantic structure.

It seems plausible that the activities constituting the Story Impressions method may have induced or at least augmented the set of processes that make up the Structure-Building Model of reading comprehension. The process of "laying a foundation" could have been enhanced by composing a best-guess scenario from the eighteen most structurally important elements of the passage to be read. Then, as the students read the actual story vis-à-vis the composed one, information in the actual story that was consistent with the composed one could have induced "mapping" onto the semantic structure developed during the composing process. Newly read information in the actual story that was inconsistent with the composed story could have induced the "shifting" process to modify the semantic structure of the composed story. Perhaps, the superior performance of the Story Impressions group was due to the augmentation of these three critically important processes involved in reading comprehension with the generative activity of composing serving as the primary means to that end.

It is unclear, however, why the content preview employed in this investigation was not shown to enhance overall comprehension of a biographical history text when compared to no preview. The results of the present study did not agree with those of previous investigators (Dole et al., 1991; Graves, Cooke, & LaBerge, 1983; Graves & Prenn, 1984; Graves, Prenn, & Cooke, 1985), who found that students receiving content previews exceeded the performance of students who did not. The content preview employed in the present study conformed to the criteria set forth by Graves and his associates. Our study, however, differed in two important respects from his previous investigations. First, we had our students read the content preview rather than hear it from an oral presentation. The presentation format may make a difference. Second, the passage previewed in our investigation was an historical biography rather than a short story. The type of text may make a difference to the effectiveness of content previews. Finally, as pointed out by Graves (Graves, Cooke, and LaBerge, 1983), the effectiveness of content previews might vary from passage to passage for a variety of other reasons, including such factors as length, difficulty, and the reader's purposes for reading.

Educational Implications

According to Gernsbacher's (1990) model, structuring information while reading is the fundamental process underlying the comprehension of material. The research literature on individual differences in cognitive style (Davis, 1991; Messick, 1994) indicates that some learners (Field Independent) naturally structure incoming material while others (Field Dependent) do not spontaneously engage in any structuring activity. The distinction between Field Independent (FI) and Field Dependent (FD) learners is often based on high or low scores respectively on the Embedded Figures Test (French, Erksstrom & Price, 1963), which was developed by Witkin (Witkin & Goodenough, 1981). Compared to FDs, FIs can more readily detect previously seen simple figures embedded in complex ones. Research indicates, however, that FDs can quite easily be induced to structure incoming information when they are either provided with an organizational aid, such as advance organizers (Satterly & Telfer, 1979) or asked to use a learning strategy, such

as notetaking, while listening or reading (Frank, 1984; Rickards, Fajen, Sullivan & Gillespie, 1997). Fls, on the other hand, seem to do better when left to their own devices (Witkin, Moore, Goodenough & Cox, 1977). It would seem that the FDs might profit considerably from the Story Impressions method as a means of developing in them a structure-building orientation to reading comprehension. Further research needs to be done to examine this potential implication.

Since its inception the story impressions preview method has gained wide popularity among teachers and has been frequently referenced in textbooks of reading strategies and practices (e.g., Gipe, 1998; Tiernery, Readence, & Dishner, 1990), guidebooks for classroom tutors (Hermann, 1994), textbooks on methods of elementary literacy instruction (e.g., Barr & Johnson, 1997; Cooper, 1993), and strategy handbooks that accompany literature series (e.g., Beers, 2000). Story Impressions have even been used by a noted science fiction writer (Stephenson, 1995) as chapter section titles for a science fiction novel. This study supports the broad use of the SI method for previewing narrative text passages. Moreover, the present research suggests that unlike other previewing methods, the SI method is effective because it prompts readers to engage in several processes important to reading comprehension—rather than focusing on a single process such as making predictions or the activation prior knowledge. The SI method, however, does not teach students a reading comprehension strategy they can use independently. Therefore, although it is effective and teachers need a variety of activities to keep students motivated and to integrate writing and reading instruction, the SI method is limited in its utility for students. Future research should examine the long term effects of repeated use of the SI method across narrative passages to see whether there are any lasting effects on overall reading comprehension.

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Table 1

Means and Standard Deviations for Total Recall, Recall of Referenced Information, and Recall of Non-Referenced Information By Preview Method, Reading Ability, and Teacher

Group	n	Total Recall		Referenced Information		Non-Referenced Information	
		M	SD	M	SD	M	SD
No Preview	25	21.7	8.4	7.2	2.9	14.4	5.9
Below Median Readers	12	16.2	7.0	5.3	2.5	10.8	5.1
Teacher 1	6	16.8	7.8	5.0	2.4	11.8	6.3
Teacher 2	6	15.5	6.7	5.7	2.8	9.8	4.0
Above Median Readers	13	26.8	6.2	9.0	2.1	17.8	4.6
Teacher 1	6	25.7	7.7	8.5	2.1	17.2	5.8
Teacher 2	7	27.7	5.0	9.4	2.2	18.3	3.6
Content Preview	25	22.6	8.0	8.2	2.7	14.4	5.6
Below Median Readers	12	18.3	6.2	6.9	2.4	11.3	4.2
Teacher 1	6	15.7	5.8	5.8	2.3	9.8	4.1
Teacher 2	6	20.3	6.0	8.0	2.2	12.8	4.0
Above Median Readers	13	26.6	7.4	9.4	2.4	17.2	5.4
Teacher 1	6	26.5	6.1	9.5	2.5	17.0	4.3
Teacher 2	7	26.7	8.9	9.3	2.4	17.4	6.6

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Story Impressions	24	32.4	7.0	12.0	2.2	20.3	5.0
Below Median Readers	11	27.7	7.7	10.8	2.6	16.9	5.4
Teacher 1	5	30.0	9.1	11.8	3.1	18.2	6.1
Teacher 2	6	25.8	6.6	10.0	2.0	15.8	5.0
Above Median Readers	13	36.3	2.8	13.1	1.1	23.2	2.1
Teacher 1	6	35.2	3.6	12.7	1.2	22.5	2.6
Teacher 2	7	37.3	1.7	13.3	1.0	23.9	1.5

Table 2

Analysis of Variance for Total Recall, Recall of Referenced Information, and Recall of Non-Referenced Information

Source	df	E		
		TR	RI	NRI
Preview (P)	2	47.92*	40.78*	38.81*
Error 1	3	(17.34)	(3.83)	(7.00)
Reading Ability (R)	1	39.54*	22.37*	47.75*
R BY P	2	.26	.60	.11
Error 2	3	(38.12)	(6.21)	(15.31)
Teacher W P (Error 1)	3	.41	.77	.32
R BY Teacher W P(Error 2)	3	.91	1.25	.69
Within Cells	62	(42.12)	(4.97)	(22.09)

Note. Values enclosed in parentheses represent mean square errors. TR = total recall; RI = referenced information; NRI = non-referenced information.

* $p < .05$.

Table 3

Means and Standard Deviations for Total Time in Minutes and Number of Words Written in the Story Impressions Preview Method By Reading Ability

		Total Time			Number of Words	
Story Impressions Preview	<i>n</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Total	24	19.84.7	140.1	35.9		
Below Median Readers	11	20.35.0	137.9	42.7		
Above Median Readers	13	19.44.6	142.0	30.7		

Table 4

Intercorrelations Among Total Time Writing in Minutes and Number of Words Written in the Story Impressions Previews and the Recall Measures

Factors	1	2	3	A	B
1 Total Recall	-	.93*	.98*	.61*	.14
2 Reference Information		-	.84*	.55*	.17
3 Non-Referenced Information			-	.61*	.11
A Number of Words in Preview				-	.37
B Total Time Writing Preview					-

* $p < .05$

Appendix A

Story-Impressions for "Luther Burbank" by Bailey

LUTHER BURBANK
|
GREW UP IN NEW ENGLAND
|
BECAME GARDENER OR NURSERYMAN
|
LEARNED PLANTS REPRODUCED
|
PROCESS POLLINATION OF OPEN FLOWERS
|
SAVED SEEDS FROM BEST PLANTS
|
PLANTED THEM FOLLOWING YEAR
|
POTATOES WERE LARGE WITH WHITE MEAT
|
TODAY FARMERS GROW BURBANK POTATOES
|
GET TO CALIFORNIA
|
MONEY SELLING FRUIT TREES
|
BORE PLUMS INSTEAD OF ALMONDS
|
FAMOUS AS PLANT EXPERIMENTER
|
DECIDED TO PRODUCE WHITE BLACKBERRY
|
AFTER NINE SEASONS HAD SWEET-SMELLING CALLA LILY
|
THROUGH BURBANK'S EFFORTS
|
CALIFORNIA FRUIT INDUSTRY
|
PROVED EXPERIMENTATION CREATES NEW PLANTS

Appendix B

Content Preview for "Luther Burbank" by Bailey

Have you ever heard of Burbank, California? That's right! Burbank is famous because it is the place where many television programs are made. The Tonight Show starring Jay Leno is produced there. Have you ever wondered how the city got the name Burbank? The history passage you are about to read tells the story of Luther Burbank. You will learn all about the series of events in his life that led to his securing for himself a place in American History. You will also learn why Burbank, California is named after him.

The passage you will read is a short historical biography. The biography tells about the major events in Luther Burbank's life. It starts with a quotation Luther Burbank wrote toward the end of his life. When you read this quotation, think about why Luther Burbank is famous.

Next, the biography tells about Luther Burbank when he was young. You will learn that he grew up on a farm in New England. The history tells about his early education. You will also read about people who had a positive influence on his life. As you read, try to remember who they were and why they had an influence on young Luther.

Luther Burbank had an early interest in plants. He learned that plants reproduced themselves by the process of pollination of open flowers. Eventually, he became a gardener, or nurseryman. A nurseryman is a person whose occupation is the cultivation of plants. As you read this history passage, find out what other jobs Luther held before he became a nurseryman. Also, see if you can figure out how his becoming a nurseryman changed his life.

Luther Burbank became famous as a plant experimenter. In one of his experiments he tried to improve his potatoes. He saved the seeds from his best plants and planted them the following year. In this way he developed potatoes that were large with white meat. Today farmers everywhere grow potatoes that are the descendants of Burbank's potato. As your read, try to discover what potatoes were like before Burbank experimented with them?

Luther believed he could accomplish much more with his experiments if he could get to California. In California, Luther earned money selling the fruit trees he grew. To satisfy a customer, Luther grafted plum branches onto quick growing almond trees so they bore plums instead of almonds. His customer was happy.

Burbank proved that scientific experimentation could be used to create new plants. He decided to produce a white blackberry, which he finally did. After nine seasons, he had a sweet-smelling calla lily, which is a type of flowering plant. Read the history passage to learn about some of his other remarkable achievements.

Eventually, through Luther Burbank's efforts, the valleys of California became the center of the American fruit industry. The history passage will tell you how Luther Burbank helped to make this happen. You will also want to read the passage to find out how California honored Burbank for his efforts.

Before you begin reading, there are some words I would like to define for you. Pollination is the method by which flowering plants reproduce. *Cross Pollination* involves the creation of a new type of plant by merging the seeds of two known plants to make a previously unknown plant. A *strain* is a variation on an existing plant. *Strains* are usually created to improve a specific plant. *Gladioli* and *Dahlias* are types of flowering plants. *Frolicsome* means playful.